

**WEST**[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show S Numbers](#)[Edit S Numbers](#)[Preferences](#)**Search Results -**

Terms	Documents
11 same cyanohydrin same hydrolyz\$6	2

**Database:**

US Patents Full-Text Database	▲
US Pre-Grant Publication Full-Text Database	
JPO Abstracts Database	
EPO Abstracts Database	
Derwent World Patents Index	
IBM Technical Disclosure Bulletins	▼

Refine Search:	<table><tr><td>11 same cyanohydrin same hydrolyz\$6</td><td>▲</td></tr><tr><td></td><td>▼</td></tr></table>	11 same cyanohydrin same hydrolyz\$6	▲		▼	<table><tr><td>Clear</td></tr></table>	Clear
11 same cyanohydrin same hydrolyz\$6	▲						
	▼						
Clear							

**Search History****Today's Date: 12/6/2001**

<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT	11 same cyanohydrin same hydrolyz\$6	2	<u>L4</u>
USPT	12 and hydrolyz\$6	30	<u>L3</u>
USPT	hydroxycarboxylic acid and cyanohydrin	95	<u>L2</u>
USPT	hydroxycarboxylic acid	6842	<u>L1</u>

=> D HIS

(FILE 'HOME' ENTERED AT 09:56:43 ON 07 DEC 2001)

FILE 'CAPLUS' ENTERED AT 09:56:57 ON 07 DEC 2001

FILE 'REGISTRY' ENTERED AT 09:57:10 ON 07 DEC 2001

L1 0 S ALPHA-HYDROXYCARBOXYLIC ACID/CN  
E ALPHA-HYDROXYCARBOXYLIC ACID/CN  
E HYDROXYCARBOXYLIC ACID/CN

FILE 'CAPLUS' ENTERED AT 09:58:26 ON 07 DEC 2001

L2 185 S ALPHA-HYDROXYCARBOXYLIC ACID  
L3 265 S CYANOHYDRIN AND HYDROLYZ?  
L4 0 S L2 AND L3 AND MINERAL ACID  
L5 0 S L2 AND L3 AND MINERAL ACID  
L6 0 S L2 AND L3 AND HYDROCHLORIC ACID  
L7 0 S L2 AND L3 AND SULFURIC ACID  
L8 0 S L2 AND L3

=> S HYDROXYCARBOXYLIC ACID AND L3

4470 HYDROXYCARBOXYLIC  
3033873 ACID  
3027 HYDROXYCARBOXYLIC ACID  
(HYDROXYCARBOXYLIC (W) ACID)

L9 5 HYDROXYCARBOXYLIC ACID AND L3

=> D 1-5 IBIB ABS HITSTR

L9 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 2000:712967 CAPLUS

DOCUMENT NUMBER: 133:281541

TITLE: Preparation of .alpha.-hydroxy acid esters from  
hydrogen cyanide and ketones

INVENTOR(S): Tamura, Koji; Sato, Eiji; Enomoto, Kanehiko; Sakai,  
Haruo

PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000281624	A2	20001010	JP 1999-84530	19990326

OTHER SOURCE(S): CASREACT 133:281541; MARPAT 133:281541

AB HOCR1R2CO2Ra [R1, R2 = C1-6 linear or branched (un)satd. alkyl which may be substituted with halo or C1-4 alkoxy; R1 and/or R2 = group other than Me; R1 and R2 may be bonded together to form a ring], useful as intermediates for drugs, liq. crystals, resolving agents, etc., are prepd. by (1) treating R1R2CO with HCN in the presence of base catalysts, (2) **hydrolyzing** the resulting HOCR1R2CN in the presence of mineral acids, and esterifying the resulting HOCR1R2CO2H with C4-8 linear or branched alkanols in the presence of inorg. salts. HCN was added dropwise to a mixt. of an aq. soln. of CF3COMe and Na2CO3 at 10.degree. and the reaction mixt. was further stirred at 30.degree. for 3.0 h to give HOCMe(CF3)CN. The nitrile was treated with H2SO4 at 95.degree. for 7.5 h to give HOCMe(CF3)CO2H, which was treated with BuOH in the presence of NaCl at 80.degree. for 4.0 h to give HOCMe(CF3)CO2Bu at overall yield 93.8%.

L9 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1999:296024 CAPLUS

DOCUMENT NUMBER: 131:18759

TITLE: The synthesis of (R)- and (S)-.alpha.-trifluoromethyl-  
.alpha.-hydroxycarboxylic acids via enzymatic

AUTHOR(S): Konigsberger, Kurt; Prasad, Kapa; Repic, Oljan  
 CORPORATE SOURCE: Process Research and Development, Chemical and Analytical Development, Novartis Institute for Biomedical Research, East Hanover, NJ, 07936, USA  
 SOURCE: Tetrahedron: Asymmetry (1999), 10(4), 679-687  
 CODEN: TASYE3; ISSN: 0957-4166  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Kinetic resolu. of 1,1,1-trifluoro-2-alkanone **cyanohydrin** acyl derivs. with *Candida rugosa* lipase afforded the remaining (R)-enantiomer in high selectivity (E from 30 to >200). *Candida rugosa* lipases from several suppliers were compared and found to differ remarkably in their selectivity. The (R)-enantiomer was **hydrolyzed** in one step to yield optically pure (R)-.alpha.-trifluoromethyl-.alpha.-hydroxycarboxylic acids in excellent yield. The (S)-acids were obtained in good e.e. by subtilisin-catalyzed resolu. of the corresponding racemic esters followed by chem. hydrolysis of the remaining (S)-esters.

REFERENCE COUNT: 16  
 REFERENCE(S): (2) Chen, C; J Am Chem Soc 1982, V104, P7294 CAPLUS  
 (4) Crosby, J; WO 9738124 1997 CAPLUS  
 (6) Feichter, C; J Chem Soc, Perkin Trans 1 1991, P653 CAPLUS  
 (7) Johnson, C; Acc Chem Res 1998, V31, P333 CAPLUS  
 (9) Moorlag, H; J Org Chem 1990, V55, P5878 CAPLUS  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1998:430313 CAPLUS  
 DOCUMENT NUMBER: 129:121724  
 TITLE: Manufacture of carboxylic acids with nitrile-hydrating microorganisms or their preparations  
 INVENTOR(S): Matsuoka, Kazuyuki; Matsuyama, Akikazu  
 PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10179183	A2	19980707	JP 1996-341673	19961220
EP 852261	A2	19980708	EP 1997-122301	19971217
EP 852261	A3	19991201		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 5932454	A	19990803	US 1997-992545	19971217
CN 1186061	A	19980701	CN 1997-109375	19971220
CN 1068630	B	20010718		

PRIORITY APPLN. INFO.: JP 1996-341673 A 19961220

OTHER SOURCE(S): MARPAT 129:121724

AB Carboxylic acids are manufd. by (1) treatment of nitriles (e.g. cyanohydrins) with nitrile-hydrating microorganisms or their prepsns. to (a) produce (hydroxy)amides which are **hydrolyzed** in the presence of bases to give (hydroxy)carboxylic acid salts or (b) produce (hydroxy)carboxylic acid salts and (2) electrodialysis of the resulting carboxylic acid salts to give corresponding carboxylic acids and bases (e.g. NH<sub>3</sub>). Bipolar membranes, cation-exchange membranes, or anion-exchange membranes may be used in the electrodialysis process and NH<sub>3</sub> generated in the carboxylic acid salt-producing and/or electrodialysis processes may be collected and recycled as a N source in prodn. of nitriles (e.g. HCN). Byproducts such as NH<sub>4</sub>HSO<sub>4</sub> are not generated and NH<sub>3</sub> is easily collected and recycled in the process. 2-Hydroxy-4-methylthiobutanenitrile was treated with *Gordona rubropertinctus* JCM 3204 to give 83% 2-hydroxy-4-methylthiobutanamide and 17% 2-hydroxy-4-methylthiobutanoic acid (I) ammonium salt. Then, extn. with MEK and

hydrolysis of the amide to give I Na salt and NH<sub>3</sub>, recovery from the mixt., electrodialysis of the I Na salt soln. using a bipolar membrane and cation-exchange membrane, and extn. with MEK and purifn. gave I. NH<sub>3</sub> generated and MEK used in the process were recycled.

L9 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1990:590847 CAPLUS  
DOCUMENT NUMBER: 113:190847  
TITLE: Enzyme-catalyzed reactions. 6. A convenient route to (R)-.alpha.-hydroxy carboxylic acids and (2R)-1-amino-2-alkanols from (R)-cyanohydrins  
AUTHOR(S): Ziegler, Thomas; Hoersch, Brigitte; Effenberger, Franz  
CORPORATE SOURCE: Inst. Org. Chem., Univ. Stuttgart, Stuttgart, D-7000/80, Fed. Rep. Ger.  
SOURCE: Synthesis (1990), (7), 575-8  
CODEN: SYNTBF; ISSN: 0039-7881  
DOCUMENT TYPE: Journal  
LANGUAGE: German  
OTHER SOURCE(S): CASREACT 113:190847

AB (R)-Cyanohydrins, e.g., PhCH(OH)CN, prepd. in good to excellent yields with high optical purity by enzyme-catalyzed addn. of HCN to aldehydes in org. solvents, are **hydrolyzed** with concd. HCl at ambient temp., usually in very high yield, without any trace of racemization to give (R)-.alpha.-hydroxy carboxylic acids, e.g., PhCH(OH)CO<sub>2</sub>H. Likewise, no racemization is obsd. by direct redn. of the (R)-cyanohydrins with LiAlH<sub>4</sub> to give (2R)-1-amino-2-alkanols, e.g., PhCH(OH)CH<sub>2</sub>NH<sub>2</sub>.

L9 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1953:54834 CAPLUS  
DOCUMENT NUMBER: 47:54834  
ORIGINAL REFERENCE NO.: 47:9302g-i,9303a-f  
TITLE: Synthesis of substances having the properties of plantgrowth hormones. VI. The growth-promoting activity for plants of substances which have one or more carboxylic groups attached directly to the ring system  
AUTHOR(S): Mitsui, Tetsuo; Inagaki, Kozo  
CORPORATE SOURCE: Kyoto Univ.  
SOURCE: J. Agr. Chem. Soc. Japan (1952), Volume Date 1951-1952, 25, 63-6  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Twenty such acids were synthesized. 1-Anthracene-carboxylic acid, pale yellow columnlike crystals, m. 243.degree., (prepd. by **hydrolyzing** with 5% KOH-EtOH the nitrile formed by dry distn. of the K salt of anthracenesulfonic acid, obtained by reducing with Zn dust and NH<sub>3</sub>; 1-anthraquinonesulfonic acid prepd. from anthraquinone with H<sub>2</sub>SO<sub>4</sub> and HgSO<sub>4</sub>); 2-anthracenecarboxylic acid, yellow columnlike crystals, m. 270-80.degree. (prepd. similarly from 2-anthraquinonesulfonic acid obtained from anthraquinone with H<sub>2</sub>SO<sub>4</sub>, but without HgSO<sub>4</sub>); 9-anthracenecarboxylic acid, yellow needles, m. 205-6.degree. [prepd. from anthracene and (COCl)<sub>2</sub> heated 13 hrs. at 140-5.degree.]; 9,10-dihydro-9-anthracenecarboxylic acid, colorless columns, m. 203-5.degree.; 9,10-dihydro-9,10-anthracenedicarboxylic acid, colorless needles, m. 280.degree. [anthracene in Et<sub>2</sub>O with Na and CO<sub>2</sub> gave an acid, the Na salt of which was extd. with H<sub>2</sub>O; addn. of acid gave a yellow ppt., which was purified to colorless crystals by recrystn. from AcOH, and dissolved in an equiv. of NaOH soln.; gradual addn. of dil. HCl produced 2 ppts., consisting of 9,10-dihydro-9-anthracenecarboxylic acid and 9,10-dihydro-9,10-anthracenedicarboxylic acid]; phthalic acid; trans-1,2-dihydrophthalic acid, colorless needles, m. 198-9.degree. [20 g. phthalic acid with 32.8 g. AcONa in 200 cc. H<sub>2</sub>O treated with 400 g. 3% Na-Hg and 60 cc. 50% AcOH gave 16.5 g. crude product, m. 194-7.degree.; fractional pptn. from NaOH soln. by adding H<sub>2</sub>SO<sub>4</sub> gave the pure fraction, m. 198-9.degree., not the 210.degree. of the literature; boiling this compd. with H<sub>2</sub>O caused a rise in m.p., and conversion of the compd. to 4,5-dihydrophthalic acid]; cis-1,2-dihydrophthalic acid, m. 170-80.degree. (prepd. from the trans isomer with Ac<sub>2</sub>O and PbOAc); 4,5-dihydrophthalic acid, m. 214.5-15.degree. (prepd. from trans(or cis)-1,2-dihydrophthalic

acid and 1.3% N KOH); 3-nitrophthalic acid, m. 215-17.degree.;  
4-nitrophthalic acid, m. 158-9.degree. (phthalic acid was nitrated with  
HNO<sub>3</sub> and H<sub>2</sub>SO<sub>4</sub> heated 2 hrs. at 100.degree. to give the nitro compds.; the  
Et<sub>2</sub>O-insol. fraction gave the 3-nitro acid, and the Et<sub>2</sub>O-sol. fraction the  
4-nitro acid); benzoic acid; 1-hydroxycyclo-hexanecarboxylic acid, m.  
106-7.degree.; cyclohexanecarboxylic acid, b. 127-9.degree., m.  
38.degree. [cyclohexanone in Et<sub>2</sub>O with NaCN and HCl gave the  
**cyanohydrin**, which was **hydrolyzed** with concd. HCl to  
form the crude **hydroxycarboxylic acid**, m.  
103-6.degree. (30 g. from 40 g. cyclohexanone), which was purified to the  
acid, m. 106-7.degree., by recrystg. from C<sub>6</sub>H<sub>6</sub>; this  
**hydroxycarboxylic acid** converted to the Me ester was  
treated with PCl<sub>5</sub> and then **hydrolyzed** to the  
cyclohexanecarboxylic acid]; cyclohexanecarboxylic acid, oily substance  
(prepd. by hydrogenating cyclohexanecarboxylic acid with PtO<sub>2</sub> in  
AcOH-Et<sub>2</sub>O; identified as the p-bromophenacyl ester, m. 90-1.degree.);  
.beta.-cyclogeranic acid, m. 91.5.degree. [linalool was oxidized at room  
temp. with K<sub>2</sub>CrO<sub>7</sub> and dil. H<sub>2</sub>SO<sub>4</sub> to citral, b<sub>7</sub> 80-5.degree., which with  
NCCH<sub>2</sub>CO<sub>2</sub>H gave citralidenecyanoacetic acid, m. 113-15.degree.; this was  
boiled with 17.8% H<sub>2</sub>SO<sub>4</sub>, sepd. from the brown resinous matter, dissolved  
in dil. NaOH, steam-distd., the distillate acidified, Et<sub>2</sub>O-extd., and the  
fraction, b<sub>12</sub> 85-100.degree., collected by vacuum distn.; this was  
converted to the semicarbazone, m. 164.degree., which was suspended in  
o-C<sub>6</sub>H<sub>4</sub>(CO)<sub>2</sub>O and H<sub>2</sub>O and steam-distd. to give .beta.-cyclocitral, b<sub>10</sub>  
85-95.degree.; this was oxidized with KMnO<sub>4</sub> in ice water, and the product  
extd. with Et<sub>2</sub>O, yielding .beta.-cyclogeranic acid];  
cyclopentanecarboxylic acid, m. 119.5-20.5.degree. (cyclopentanone in Et<sub>2</sub>O  
with NaCN and HCl gave the **hydroxycarboxylic acid**,  
which was esterified, treated with PCl<sub>5</sub>, and then sapond.),  
cyclopentanecarboxylic acid, b. 214-15.degree. (prepd. by hydrogenating  
cyclopentanecarboxylic acid catalytically; identified as the  
p-bromophenacyl ester, m. 75-6.degree.); 1,2-dibromocyclopentanecarboxylic  
acid, m. 130-1.degree. (prepd. by brominating cyclopentanecarboxylic acid  
in CHCl<sub>3</sub>), and 1,2-dibromocyclohexanecarboxylic acid. All of these acids  
were inactive, when tested by the epinasty method.